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OFFICERS* SINCE 1941

| No. of Annual Meeting | Year | Place | Pres. | V.Pres. | Sec. | Treas. | Editor and Ass't Editors |
|-----------------------|------|---------------------------------------------|----------------|----------------|-----------|-----------------|--------------------------|
| 26 | '42 | Monticello (Arkansas A. and M.) | Wills, I. A. | Roberts, L. B. | Ham, L.B. | Horsfall, W. R. | Moore, D. M. |
| 27 | '43 | Little Rock (U. of Ark. School of Medicine) | Roberts, L. B. | Abbott, C. E. | Ham, L.B. | Smith, T. L. | Moore, D. M. |
| 28 | '44 | Little Rock (U. of Ark. School of Medicine) | Roberts, L. B. | Dennison, M. | Ham, L.B. | Smith, T. L. | Moore, D. M. |
| 29 | '45 | Little Rock (U. of Ark. School of Medicine) | Banks, J. | Beach, I. T. | Ham, L.B. | Smith, T. L. | Moore, D. M. |
| 30 | '46 | Little Rock Junior College | Winburn, H. L. | Erwin, W. G. | Ham, L.B. | Smith, T. L. | Moore, D. M. |

ABSTRACTS OF PAPERS SINCE 1941

26th Annual Meeting May 1-2, 1942.

Arkansas A. & M. College, Monticello, Arkansas

1. **The Corpus Allatum of *Galleria Mellonella* L.** T. L. Smith, The College of the Ozarks. 15 minutes. Evidence is at hand to indicate that in *Galleria*, as has been shown to be the case in many other insects, there are (a) incretory or endocrine substances found in the head region which govern the metamorphosis of the last larval instar into the pupa, (b) critical periods in late larval development beyond which the endocrine actions cannot be interfered with. The structure of the corpus allatum in *Galleria* is typical of that found in other lepidopterous insects.
2. **An Exploratory Study of the Early Effects of Antuitrin-S in Prepubertal Rats.** Mrs. E. Z. Burkhart, Clarksville. 15 minutes. Previous work by the author ('39, '42) has shown that, by the use of colchicine, very early responses to single small doses of androgens can be detected in the accessory sex glands of castrated young adult rats. These results suggested a study of the early effects of gonadotropic substances on the accessory sex glands of prepubertal rats. Twenty-day-old rats were injected with 20 R. U. of Antuitrin-S. Uninjected animals served as controls. All the rats received 0.1 mg. of colchicine per 100 grams of body weight approximately six hours before sacrifice. The animals were sacrificed in pairs (one control and one which had received Antuitrin-S) at intervals from 13 to 44 hours after injection.

* All Academy sessions were held in the spring, preferably the last week in April, otherwise the first week in May. All yearly elected officers serve the following calendar year.

The seminal vesicles and the ventral prostates of all control animals contained varying numbers of mitotic cells. The number was significantly increased by the Antuitrin-S in the seminal vesicle at 28 hours and thereafter. The ventral prostate responded more slowly; a slight increase was evident at 35 hours and marked increase at 43 hours and 44 hours. Increased mitotic activity is an indicator of early gonadotropic activity in prepubertal rats.

3. **Notes on the Herpetology of Clay and Greene Counties, Arkansas.** M. W. Parker, Northwestern University. (Read by D. M. Moore). 15 minutes.

4. **The Largest Sassafras in Arkansas.** D. M. Moore, University of Arkansas. 5 minutes. Sassafras tree near Bentonville is here presented as a candidate for the largest Sassafras in Arkansas.

| | |
|---------------------------------------|-------------|
| Total Height | 56 feet |
| Estimated Age | 130 years |
| Diameter, B. H. | 45 inches |
| Diameter, one foot from the ground | 58.9 inches |

A challenge is issued for authentic data on any larger than this.

5. **Doubtful Arkansas Plants.** D. Demaree, Arkansas A. & M. College. 7 minutes. A list of about sixty names from the Branner and Coville list which are doubtful as occurring in this state. Some are excluded on range and others on synonymy. It is much more difficult to throw a plant out of these old lists than it is to add a new one.

6. **Orchids of Arkansas.** Illustrated. D. M. Moore, University of Arkansas. 15 minutes. Orchids are essentially tropical plants with only about 15% of the 15,000 known species occurring in temperate regions. Of these, about 30 occur in Arkansas. These were listed and briefly described.

7. **Leaf Oils of Arkansas Gymnosperms, I. Juniperus Mexicana.** D. M. Moore, University of Arkansas. 12 minutes. *Juniperus mexicana*, the Ozark White Cedar, has been pointed out previously to be notably free from rusts. The difference in the odor of the crushed leaves has suggested that the difference might be due to the different oils present in the leaves. A preliminary examination of the leaf oils disclosed the following:

Steam extraction of green leaves yields a clear, slightly yellow oil with a rich aromatic odor somewhat resembling that of turpentine. At the same time a clear, colorless material, distinctly resembling camphor in appearance and odor, crystallized in the condenser. Fractional distillation of the oil gave a series of fractions varying in color, odor, and consistency. Specimens of the fractions were displayed.

8. **Suppression of Crystallization in Paraffin for Embedding.** F. Dickey, Arkansas A. & M. College. 12 minutes.
9. **Vapor Pressures II, Nitroparaffins.** D. Coleman. 12 minutes.
10. **Some Studies on the Thermodynamics of Solutions.** C.F. Bjork, John Brown University. 15 minutes. The present work was

conducted by W. G. Eversole and C. F. Bjork in the Physical Chemistry laboratory at the State U. Of Iowa. Since the change in free energy may be considered as the driving force in a chemical reaction the authors felt that it might prove interesting to conduct a few investigations pertaining to it.

Vapor pressure measurements were made on aqueous potassium nitrate solutions. Geometric mean activities of ions were calculated. The free energies of dilution of both solvent and solute were determined. Finally an empirical equation was derived which showed the relationship between the actual composition of the solution and its volume. This facilitated the calculation of partial molal volumes.

11. **A Modified Periodic Chart.** L. B. Roberts, Arkansas, A. & M. College. 12 minutes.
12. **How Should Science Be Taught to Aid in Our Present Emergency.** I. A. Wills, John Brown University. 12 minutes.
13. **Objectivity in Biology.** C. E. Abbott, Harding College. 10 minutes.
14. **The Use of Living Materials in Teaching General Science and High Biology.** Miss Mildred R. Pool, John Brown University. 12 minutes.
15. **Some Trends and Problems in Present Day Teaching of Secondary Physics.** L. B. Ham, U. Of Ark. 15 minutes. Broadening the educational base in our school system, and the rapid development in physics have brought unforeseen problems in the conduct of Physical Science in the secondary schools. Physicists feel that many of the resulting problems can be solved only by cooperative action of leaders in the various scientific fields and in the educational field. Moreover, the resulting march of scientific progress, as far as physics is concerned, in upsetting the established social and economic order is not sufficiently recognized by the social science worker so that balanced coordination between physical science, social science and the economic order can be established. The march of science presents our society with a continuously changing social order.
16. **Strategic Mineral Resources of Arkansas.** R. J. Anderson, acting State Geologist. 30 minutes. A discussion of Arkansas mineral resources of strategic importance with special emphasis on recent development in their discovery and utilization. Illustrated.

27th Annual Meeting May 1, 1943

University of Arkansas School of Medicine, Little Rock, Arkansas

1. **Treatment of Cancer by Radiation.** J. S. Wilson, M. D., Mack Wilson Hospital, Monticello. 15 minutes. After discussing the cancer problem from the standpoint of human waste and of suffering and the need of education, both to encourage prompt application for treatment and to discourage reliance on "quacks", the author takes up the types of cancer and their treatment. The history and present use of radiations (both those from radium and the X-rays) in cancer treatment are particularly emphasized.
2. **Reducing Action of Sugars and the Longevity of Flies.** Cyril E. Abbott, Independence, Iowa. 10 minutes.